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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,210	04/13/2004	Donald Prentice Satchell JR.	M00A435-DIV	4637

7590 10/17/2005
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EXAMINER

NECKEL, ALEXA DOROSHENK

ART UNIT PAPER NUMBER

1764

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,210

Applicant(s)

SACHELL ET AL.

Examiner

Alexa D. Neckel

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 25-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/13/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. In the Information Disclosure Statement filed April 13, 2004, US Patent Document citations numbered 13 and 14 have been crossed out as they are already listed above at 2 and 9. The European Search report, citation 16, has been considered, but crossed out since it is not a published document available to the public. A copy of unnumbered citation "Materials Science Forum" has not been provided by applicant.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "liquid $\text{NH}_4\text{F}(\text{HR})_x$ by-product 29" at page 12, line 19. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

The status of Divisional Application No. 10/071,114 should be updated as it is now U. S. Patent No. 6,908,601.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 25-29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Satchell, Jr. et al. (US 2002/0127167 A1).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Even though materials worked upon (such as the composition of a feed) do not limit apparatus claims, MPEP 2115, but the applied reference has the same feed compositions as the instant claims and have been cited in the rejection below.

With respect to claim 25, Satchell discloses an apparatus comprising:

a reactor (100) with a reaction zone (below 110), mixing zone (within riser 18) and an outlet (7);

a gaseous fluorine feed supply (1), a liquid ammonium acid fluoride feed supply (6), and a working fluid vapor supply (14) to the mixing zone (18); and

wherein the working fluid supply input (14) is upstream of the mixing zone (18).

Although Satchell does not expressly disclose a "nozzle" for the various feeds, some form of a nozzle would be required/inherent in order to supply the feeds into the reactor as disclosed.

With respect to claims 26 and 27, Satchell further discloses wherein the working fluid supply is vaporized hydrogen fluoride (page 1, paragraph 0007 and page 4, paragraph 0032).

With respect to claim 28, Satchell further discloses a separator (800) in communication with the outlet (7) and comprising a fluid outlet (24) and an outlet (26) for NF_3 .

With respect to claim 29, Satchell further discloses wherein the working fluid vapor supply (14) comprises: liquid working fluid supply (5) which flows into a heat exchanger (1000) and then flows out as a gas (14) into the mixing zone (18).

With respect to claim 31, Satchell further discloses wherein the reactor (100) has an internal partition (riser 18) between the mixing zone and reaction zone in the reactor.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satchell, Jr. et al. (US 2002/0127167 A1) as applied to claim 29, above, and further in view of Tarancon (5,628,894).

With respect to claim 30, Satchell discloses the apparatus as described above, including a heat exchanger (1000), but fails to disclose that the heat exchanger can be positioned within the reactor.

Tarancon also discloses an apparatus for producing nitrogen trifluoride and teaches where providing evaporating/heating components within the reactor heat the molten flux to the proper temperature range for an efficient process reaction to take place (col. 2, lines 57-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the heat exchanger of Satchell within the reactor as taught by Tarancon in order to heat the molten flux to the proper temperature range for an efficient process reaction to take place.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa D. Neckel whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa D. Neckel
Examiner
Art Unit 1764

October 13, 2005

Alexa Neckel
ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER